

IN THE CLAIMS

Attached is a listing of the claims in accordance with the revised format of amending. "Original" refers to claims attached to the IPER of the international application.

1. (Previously Presented) Apparatus for duplex printing comprising:

a first impression roller on which a first side of a sheet having a leading edge and a trailing edge is printed referenced to the leading edge;

a second impression roller on which a second side of the sheet is printed; and

a transport system that removes a printed sheet from the first impression roller and transports it to the second impression roller, the transport system comprising a perfector including an element rotating about an axis, the element receiving the sheet and gripping the sheet simultaneously along both the leading and trailing edges thereof, which rotating element turns the sheet over and transfers the sheet, trailing edge first, towards the second impression roller,

wherein the perfector rotates in a first direction when removing the sheet from a preceding roller and rotates in an opposite direction when it passes off the sheet to a following roller.

2. (Original) Apparatus according to claim 1 wherein the perfector transfers the sheet with the trailing edge registered to the leading edge.

3. (Previously Presented) Apparatus according to claim 1 wherein the perfector comprises a first array of suction cups that grips the sheet adjacent the leading edge and a second array of suction cups that grips the sheet adjacent the trailing edge.

4. (Original) Apparatus according to claim 3 wherein the distance between the first and second suction cup arrays is adjustable to accommodate different size sheets.

5. (Previously Presented) Apparatus according to claim 3 wherein the perfector comprises a shaft to which the arrays of suction cups are mounted.

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6. (Original) Apparatus according to claim 5 wherein the first and second arrays of suction cups are respectively connected via first and second internal channels in the shaft to at least one vacuum system that controls aspiration of suction cups in the arrays.

7. (Original) Apparatus according to claim 6 wherein the first and second channels respectively have first and second orifices on the surface of the shaft and wherein the first orifice is displaced from the second orifice along the axis of the shaft.

8. (Original) Apparatus according to claim 7 and comprising first, second and third annular bearings mounted to the shaft, wherein each bearing has an inner and outer race that sandwiches a plurality of rollers and a grease seal providing a seal between the inner and outer race.

9. (Original) Apparatus according to claim 8 wherein the first orifice is located between the first and second bearings and the second orifice is located between the second and third bearings.

10. (Original) Apparatus according to claim 9 wherein the shaft is sealed to the inner race of each bearing.

11. (Original) Apparatus according to claim 10 and comprising a housing mounted on the bearings, the housing having a housing wall formed with first and second through holes and having a cavity defined by a cavity surface, and wherein the first through hole is located between the first and second bearings and the second through hole is located between the second and third bearings.

12. (Original) Apparatus according to claim 11 wherein the outer race of each bearing is sealed to the cavity wall.

13. (Original) Apparatus according to claim 12 wherein the first and second through holes are connected to the at least one vacuum system via first and second pressure hoses respectively and wherein the suction cups of the first and second suction cup arrays aspirate when the at least one vacuum system respectively draws air through the first and second pressure hoses.

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14. (Previously Presented) Apparatus according to claim 1 wherein the perfector comprises at least one sheet support surface on which the sheet lies when it is held by the perfector.

15. (Original) Apparatus according to claim 14 and comprising a fan that creates airflow that presses the sheet flat to the at least one sheet support surface.

16.-28. (Cancelled)

29. (Previously Presented) Apparatus for duplex printing comprising:

- a first impression roller on which a first side of a sheet having a leading edge and a trailing edge is printed referenced to the leading edge;

- a second impression roller on which a second side of the sheet is printed; and

- a transport system that removes a printed sheet from the first impression roller and transports it to the second impression roller, the transport system comprising a perfector that receives the sheet and grips it along both the leading and trailing edges thereof, which perfector turns the sheet over and transfers the sheet, trailing edge first, towards the second impression roller,

- wherein the perfector rotates about in a first direction when removing the sheet from the preceding roller and rotates in an opposite direction when it passes off the sheet to a following roller.

30 (Previously Presented) Apparatus according to claim 29 wherein the perfector comprises an element that rotates about an axis and simultaneously grips both leading and trailing edges.

31. (Cancelled)

32 (Previously Presented) Apparatus according to claim 30 wherein the element rotates about in a first direction when removing the sheet from the preceding roller and rotates in an opposite direction when it passes off the sheet to a following roller.

33. (Currently Amended) ~~Apparatus according to claim 1,~~ Apparatus for duplex printing comprising:

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a first impression roller on which a first side of a sheet having a leading edge and a trailing edge is printed referenced to the leading edge;

a second impression roller on which a second side of the sheet is printed; and
a transport system that removes a printed sheet from the first impression roller and transports it to the second impression roller, the transport system comprising a perfector including an element rotating about an axis, the element receiving the sheet and gripping the sheet simultaneously along both the leading and trailing edges thereof, which rotating element turns the sheet over and transfers the sheet, trailing edge first, towards the second impression roller,

wherein the transport system includes a second rotating element that receives the sheet from the element of the perfector and grips the originally trailing and presently leading edge of the sheet utilizing suction grippers, the rotating perfector element and the second rotating element rotating in opposite senses, so that the rotating perfector element and the second rotating element have a same direction of velocity at their region of proximity,

34. (Previously Presented) Apparatus according to claim 29, wherein the transport system includes a second rotating element that receives the sheet from the element of the perfector and grips the originally trailing and presently leading edge of the sheet utilizing suction grippers.